

REMARKS

Applicants thank the Examiner for the very thorough consideration given the present application. Claims 14-22 and 24-25 are currently pending in this application. None of the claims have been amended. Accordingly, no new matter has been added.

In view of the amendments and remarks herein, Applicants respectfully request that the Examiner withdraw all outstanding rejections and allow the currently pending claims.

Issues Under 35 U.S.C. § 103(a)

Claims 14-22 and 24-25 stand rejected under 35 U.S.C. 103(a) as being obvious over Daly (U.S. 3,024,211) (hereinafter “Daly”). Applicants respectfully traverse.

The Examiner asserts that Daly teaches a plastic composition of isotactic monolefin polymer and cyclized natural rubber, which can be formed into films or sheets and be formed into composite articles by laminating with sheet metal.

The Examiner acknowledges that Daly fails to teach that the resulting film is laminated with a thin film of 1nm to 100 microns by a dry film forming process. The Examiner further acknowledges that Daly fails to teach the specific molecular weight, cyclization ratio and gel amount of the cyclized rubber, or the incorporation of polar functional groups into the rubber. The Examiner, however, asserts that all these modifications would have been obvious to one skilled in the art.

Applicants respectfully submit that the Examiner has failed to establish a *prima facie* case of obviousness. To establish a *prima facie* case of obviousness, the prior art reference (or references when combined) must teach or suggest all the claim limitations. *In re Vaeck*, 947 F.2d

488, 20 USPQ2d 1438 (Fed. Cir. 1991). Additionally, there must be a reason why one of ordinary skill in the art would modify the reference or combine reference teachings to obtain the invention. A patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art. *KSR Int'l Co. v Teleflex Inc.*, 82 USPQ2d 1385 (U.S. 2007). There must be a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does. *Id.* The Supreme Court of the United States has recently held that the "teaching, suggestion, motivation test" is a valid test for obviousness, albeit one which cannot be too rigidly applied. *Id.* Rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. *Id.*

The present invention is directed, *inter alia*, to a laminate, comprising a polymer substrate in which a cyclized rubber is incorporated into a polymer-molding material made of a non-polar hydrocarbon, and a thin film laminated on the surface of the polymer substrate by a dry film-forming process (see, e.g., claim 14). As discussed at paragraphs (0002)-(0003) of the present Specification (paragraph numbers refer to US 2006/0127655 which is the publication of the present application), during conventional film-forming processes, issues arise with regards to the adhesiveness of the obtained thin film, which is poor. This is caused when a polymer substrate made of a non-polar hydrocarbon polymer substrate is subjected to a dry film-forming process. In order to solve the problems of prior art film-forming processes, the present inventors have discovered a method of improving the adhesiveness of a thin film, wherein a conjugated diene polymer cyclized product or a derivative thereof is incorporated into a non-polar

hydrocarbon resin (see also paragraph (0013) of the Specification).

Daly discloses a composition comprising a cyclized rubber and polyethylene or polypropylene. Daly further teaches a technique for improving the sheet-molding properties of the isotactic polyethylene or similar plastic monoolefin polymer, made by the Ziegler-Natta catalyst, by blending the isotactic polyethylene with cyclized natural rubber when processing by a calender method. Daly also teaches that the composition molded by the calenders (polymer substrate) can be laminated with a sheet metal of other reinforcement.

However, Applicants submit that Daly does not teach or suggest the specifics of the laminate, namely (a) a polymer substrate comprising the composition; or (b) a thin film laminated on the surface of the polymer substrate. Moreover, Daly is completely silent regarding the thickness of the metal sheet, or the method of laminating the metal sheet.

The Examiner asserts that a person skilled in the art could have easily arrived at the present invention based on the teachings of Daly with regards to a laminate made of a polymer substrate and a metal sheet. The Examiner argues that optimizing the thickness of a metal sheet for a particular end use is within the scope of a conventional technical arrangement, and further argues that a dry film-forming process is a well-known technique used to laminate a metal thin film to a polymer substrate. Applicants respectfully disagree.

As explicitly disclosed by Daly, this reference teaches a “sheet metal **or other reinforcement**” (emphasis added). Clearly, the metal sheet in Daly is a reinforcement material used in laminating. One skilled in the art would not have been motivated to utilize the metal sheet of Daly as a thin film (i.e., having a thickness of 1 nm to 100 μ m), as such a thin film cannot provide sufficient reinforcement. Moreover, one skilled in the art would not have been

motivated to apply a dry film-forming process to the metal sheet of Daly, as dry film-forming processes are normally used to obtain extremely thin films. Applicants submit that one skilled in the art would not have been motivated to form a thin film by a dry film-forming process on the polymer substrate of Daly.

In Daly, the purpose of blending the polymer (i.e., isotactic polyethylene) with cyclized natural rubber is to improve the properties of the polymer itself that facilitate calender processing. Daly does not in any way teach or suggest improving adhesiveness. Applicants submit that one skilled in the art, faced with the teachings of Daly, would not have foreseen or predicted the effects obtained by improving the adhesiveness between the polymer substrate and the thin film obtained by a dry film-forming process. One skilled in the art would have no rationale or reason to use a thin film obtained by a dry film-forming process instead of the metal sheet contained in the laminate disclosed in Daly.

As known in the art, prior to the present invention, one of the issues arising when a dry film-forming process was applied to a polymer substrate made of a non-polar hydrocarbon polymer substrate such as polyethylene was poor thin film adhesiveness. This in turn caused the thin film to easily peel off. In view of this, a skilled person would avoid using the metal sheet of Daly to form a thin film by a dry film-forming process on a polymer substrate containing a non-polar hydrocarbon polymer substrate such as polyethylene.

Because the invention, as set forth in Applicants' claims, is not disclosed or made obvious by the cited prior art, reconsideration and withdrawal of this rejection are respectfully requested.

Conclusion

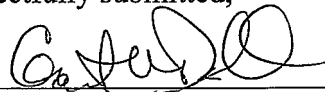
All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding rejections and objections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action and, as such, the present application is in condition for allowance.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact the undersigned at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

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Respectfully submitted,

By 

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